



"READING MAKETH A FULL MAN", and it's done pretty well by Lena Mae Chavez (3521) too, who poses with some of the books donated to the LAB NEWS Christmas book sale. Stop by the stand in the lobby of Bldg. 802. Proceeds buy goodies for poor families on South Ten. More books and records are always needed, so bring yours in.

### **Hybrid Microelectronics Society Will Organize In New Mexico**

Dick Knutson (1431) reports that New Mexico has received a charter to form a chapter of the International Society for Hybrid Microelectronics. The organizational meeting will be held in Los Alamos, Dec. 8. Dick invites all those interested to contact him on 264-1868. The meeting will probably be preceded by a dinner at the Los Alamos Country Club.

# LAB NEWS

VOL. 23, NO. 24

DECEMBER 3, 1971

SANDIA LABORATORIES • ALBUQUERQUE NM • LIVERMORE CALIF • TONOPAH NEV

## **Pete Rand Develops New Syntactic Foam Material**

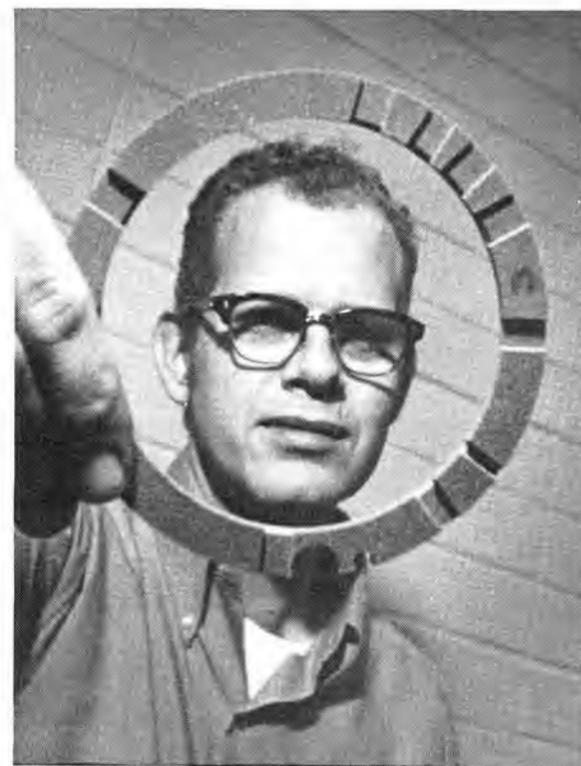
Internal structural members of reentry vehicles must withstand the tremendous heat of reentry, offer good insulation, and provide structural strength. A new type of syntactic structural foam developed by Pete Rand of Polymer Research and Development Division 5513 possesses these qualities. It is also better able to resist shock without permanent deformation or rupture and it is more temperature resistant than conventional polyurethane foams.

Conventional foams are produced by introducing gases into the polymers which form "bubbles" inside the material. Syntactic foams are made by using miniscule (20 to 80 microns in diameter) glass micro-balloons in combination with resins. (This paper is about 90 microns thick.)

Called HTF-60, the new Sandia foam formulation contains 60 percent by weight of the micro-balloons. It can be machined into tough, low-density structural supports that will withstand continuous temperatures up to 600°F. or temperatures up to 900°F. in bursts of one minute or less. Its density is 23 pounds per cubic foot.

At 600°F., the HTF-60 retains about 65 percent of its original strength. This value drops by only a few percentage points at temperatures around 700°F.

The foam is prepared by combining 4-benzolpyridine, acetic anhydride, and a polyimide precursor (polyamic acid) with a mixture of glass micro-balloons. A chemical reaction converts the acid to a polyimide. It is poured into a mold and "jelled" in an oven for two hours at 150°F. Curing and post-



PETE RAND (5513) shows a machined part made from a new syntactic foam he developed. The material is extremely resilient and resistant to high temperatures.

curing schedules are then carried out, after which the foam is ready for machining.

Pete has worked in the Materials organization at Sandia for 10 years. He joined the company after graduating from Franklin Technical Institute in Boston in 1961. • dg

# Afterthoughts

More on Most Dangerous Intersection--Last time we gave the award to Wyoming and Zuni, noting that cars attempting to make left turns get hung up in the intersection after the light changes. Gordon McClure (1412) called to relate that his son just out of driving school reminded him that it is illegal to enter an intersection for a left turn unless the way is clear. If it isn't, you're supposed to wait at a point just before the intersection itself. You may have a long wait at some intersections...

They Don't Make Ethics Like That Anymore--"It is not the critic who counts, not the man who points out how the strong man stumbled, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena; who errs and comes short again and again... who knows the great enthusiasms, the great devotions and spends himself in a worthy cause; who, at the best, knows in the end the triumph of high achievement; and who, at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat."--Teddy Roosevelt

Piano Lessons Might Be Fun--"Experienced teenager giving beginning piano lessons..." (ad on Bldg. 802 bulletin board).

Credibility Gap Defined: When you give your girl a two karat diamond engagement ring that has the faint scent of Cracker-jacks about it.

Laziest Creature in the Universe, Traffic Division--The driver who can't bring himself to use his turn signals when turning and by the vintage of his car you know damn well he has them.

Interesting Query--Is it true that men who wear their initials on their shirts, license plates, cuff links and the like are having an identity crisis? • js

## Supervisory Appointments

DICK HOSLEY to supervisor of Third Shift Section 5411-3 of Computer Operations Division, effective Oct. 16.



Since joining Sandia in February 1957, Dick has worked in accounting, programming, at NTS as assistant to the test director for Project Derringer in 1966, at the Honolulu office as transportation officer, and since 1969 has been a staff assistant in the computer operations organization. Before coming to the Labs, Dick was a quality assurance supervisor for seven years at Sprague Electric in North Adams, Mass.

Dick graduated from Bliss Business College in North Adams and served for seven years in the U.S. Army during WWII.

Dick and his wife Ruth have one daughter and live in Corrales.

MIKE ROBLES to supervisor, Second Shift Section 5411-2, of Computer Operations Division, effective Oct. 16.



Since coming to the Laboratories in June 1969, Mike has been a programmer analyst with the Personnel and Payroll Management Development Systems Division. He worked for seven years with the U.S. Post Office in Albuquerque.

Mike has completed two years of college and a two-year data processing technology course at TV-I. He is currently attending UNM under Sandia's Computer Science Program. He served eight years in the Coast Guard Reserve.

Mike and his wife Dolores have four children and reside at 4014 Camino Del Valle SW.

## Authors

W.R. Abel (5132), "Effect of Pressure on the Static Dielectric Constant of  $KTaO_3$ ," Vol. 4, No. 8, PHYSICAL REVIEW B.

P.S. Peercy and B. Morosin (both 5152), "Phase Transitions in Tetramethylammonium Manganese Chloride and Tetramethylammonium Cadmium Chloride," Vol. 36, No. 5, PHYSICS LETTERS A.

## Congratulations

Mr. and Mrs. George Williamson (9126), a daughter, Christine Ann, Oct. 16.

## Sympathy

To Vern Webby (4551) for the death of his mother in Longmont, Colo., Nov. 8.

To L.F. Dyer (9343) for the death of his father-in-law in Minnesota, Oct. 24.

To Joe Shelby (7142) for the death of his sister in Fairplay, Colo., Nov. 9.

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## Events Calendar

Dec. 3-4, 7-11, 14-16 -- "The Best Man," Albuquerque Little Theatre, 8:00 p.m. For reservations 242-4750.

Dec. 3-5 -- "The Miracle Worker" Old Town Studio 8:00 p.m., For reservations, 242-4602

Dec. 4 -- "N.M. Mt. Club, North Sandias Exploratory, meet at Gulf Mart, 8:30 a.m.

Dec. 5 -- "The Last of the Red Hot Lovers" 8:15 p.m. Popejoy Hall.

Dec. 5 -- "N.M. Mt. Club, Ladron Peak, meet at UNM Lobo, 7:30 a.m.

Dec. 10-12 -- Ballet West, 8:15 p.m. Popejoy Hall.

Dec. 4 -- Basketball, UNM vs. N.M. State, 7:30 p.m. - UNM Arena.

Dec. 9 -- Basketball, UNM vs. Oklahoma Christian College, 7:30 p.m. - UNM Arena.

Dec. 11 -- Basketball, UNM vs. Texas Tech, 7:30 p.m. - UNM Arena.

Dec. 12 -- N.M. Mt. Club, Christmas tree expedition to Jemez Mts., Gulf Mart 8:00 a.m.

## LAB NEWS

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Area 505 264-1053  
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In Livermore Area 415 455-2111

John Shunny is Editor &  
Don Graham Ass't. Editor.

Norma Taylor Pitches In &  
Bill Laskar is the Photographer.

In Livermore, Matt Connors &  
Lorena Schneider are

Writers, while

George Hosoda is the Photographer.

# LIVERMORE NEWS

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LIVERMORE LABORATORIES

DECEMBER 3, 1971



DESIGN LAYOUT for patented Plowshare temperature control system is subject of conversation for inventors (l to r) Mo Jones (8423) and Dell Elliott (8175).

## For Plowshare Program

### **Temperature Control Unit Invented**

AEC has been awarded a patent in the names of Mo Jones (8423) and Dell Elliott (8175) for a self-contained temperature control system for Plowshare (program for industrial and civilian application of nuclear explosives).

In some Plowshare applications, nuclear explosives may be emplaced as deep as 20,000 feet where temperatures can reach 300°F or more. At these high temperatures, nuclear explosives used in these applications might sustain damage and the new system keeps temperature in the explosive below 165°F.

The system consists of two stainless-steel, open-necked dewar containers. The containers use insulation of highly reflective metal foil separated by low thermal conductivity spacers of cloth or fiber paper in the vacuum area formed by the double walls of the containers. The nuclear explosive is placed on one of the containers. The other container (of smaller

diameter) is filled with ice super-cooled to -65°F. Both containers are assembled within the high pressure case, capped and lowered into the ground. The self-contained feature has distinct advantages over other systems requiring downhole cables or other means of supply. In the proposed system, the explosive and ice are packaged in a container 12 inches in diameter and 20 feet long. System life is calculated to be as long as 40 days.

### **Livermore Employees Helping Needy Children at Christmas**

An old tradition but something new at Sandia/Livermore is the upcoming box lunch auction. Sponsored by the Christmas Fund Committee, the auction is being held to help needy children at Christmas.

Proceeds will be divided equally, with 50 percent going to children activities at the Livermore-Amador Valley Emergency Fund Center and the other 50 percent to the building fund for the Twin Valley Association for Retarded Children.

To participate, just bid on a lunch prepared by your secretary by signing the "bid sheet" posted in a convenient place in the office and filling in the amount of your offer (minimum 75c with 25c increments). High bidders will join the secretaries in Room 185,

## **Take Note**

Bob Rinne of Systems Research Division I 8324 is back at Livermore after receiving a PhD degree in mathematics from the University of Virginia under Sandia's Doctoral Study Program. His thesis was "Equivariant Classifying and Map Bordism." Bob joined the Laboratories in 1966 after earning his BA degree from the University of California at Riverside and MA degree from the University of Virginia, both in mathematics.

\* \* \* \*

Dewey Farmer (8434) was among a number of local residents and companies to receive beautification awards recently from the Livermore Beautification Committee. Dewey was recognized for his attractive aged-wood home with desert-type landscaping located at 986 Lisbon Avenue.

\* \* \* \*

Bill Childers of Statistical and Reliability Division 8139 received a BS degree in mathematics recently from California State College at Hayward. His course work was completed under Sandia's Educational Aids Program over a 10-year period. Bill previously received his AS degree in electrical engineering from Southern Technical Institute in 1961, following which he joined Sandia/Albuquerque. He was assigned in AF&F system design in the field test organization, and in August 1968 transferred to Livermore.

\* \* \* \*

Don Knaple (8161) shot a low net score of 74 to win the first place trophy in the recent Sandia Employees Golf Club tourney played at Skywest Golf Course in Hayward. Carl Beckham (8136) and Ollie Rohrback (8431) tied for second with scores of 75. In the "fewest putts" feature, Vern Gabrielson (8321) placed first and John Lindman and Doug MacMillan (both 9125-1) tied for second.

Bldg. 912, on Dec. 9 at noon for a Christmas box luncheon get-together.

Another new idea from the Christmas Fund Committee this year is a bean guessing contest — employees guess the number of beans in a jar (located at the southeast entrance to Bldg. 912 near the food machines). Winner gets a gift package; losers are "has beans."

And don't forget the Sandia Christmas program! Written and produced by Dave West (8235), this year's spectacular stars five Sandians. There will be three opportunities to see the program — Dec. 14, 15, and 16 in Room 185, Bldg. 912, at 12 noon. Winner of the bean guessing contest will be announced at the Dec. 16 performance.

**CHRISTMAS  
DINNER DANCE**

**TONIGHT!**

# Don Robbins Wins Computer Art Contest



Don Robbins, supervisor of Advanced Techniques Division 5424 of Applied Computer Science Department, recently attended a Users of Automatic Information Display Equipment (UAIDE) conference in Los Angeles. As part of the program the conference sponsored a computer art contest. Of the 30 entries, Don's was declared the winner by popular vote of the conference attendees.

Don's entry consisted of several variations of a black and white image of his son. The original picture, reproduced from a high school year book, was converted by a scanner from light and dark image values (grey levels) into appropriate numerical values, that is, into a form which the computer can read. Don achieved the variations of the image by selecting specific numerical points for the computer to follow. For example, one print-out emphasizes vertical lines, another, horizontal lines; one image has the appearance of a contour map — highlighting the high or low density areas.

Don has also produced the image in color. He assigns a color code to a band of numerical values (0 to 8 green, 9 to 14 red, etc.) and the computer then produces a striking color image.

"I have always hoped that we would be able to add the sense of sight to a computer," Don says, "and now, in effect, the computer can see. In scientific applications, this and other advanced computer display techniques enable us to manipulate visual information to aid in system design." • nt

DON ROBBINS (5424) displays his entries that recently won a UAIDE computer art contest. The experimental graphics technique enables the computer manipulation of visual information.

## Bicycling to Sandia — What's Your Opinion?

Someone once said that the bicycle is the only invention of modern man that has never been converted to destructive purposes.

We disagree.

Riding a bicycle to and from work at Sandia under present traffic conditions can be very destructive — self-destructive to the rider. This is unfortunate because cycling has many advantages, both for the individual rider and for the community.

Pedaling home after a hard day in the office, lab, or shop can be great refreshment for the body and the spirit.

Pedaling to work in the morning is one way to start the day with vigor.

And pedaling anywhere at any time also saves gas and wear and tear on the family car.

Finally, the more cyclists, the less cars on the road, and the less cars, the less pollution, which is good for all of us.

How can we improve the lot of the bicyclist? The following survey is a first step. Please send your answers and comments to the LAB NEWS. We will publish your suggestions and make your ideas available to city officials. • js

### Bicycle Survey — Mail To Lab News, Org. 3212

Do you regularly ride a bicycle to work? \_\_\_\_\_

If yes, what is your route? \_\_\_\_\_  
\_\_\_\_\_

If not, would you cycle to work if you had a reasonably direct and safe route? \_\_\_\_\_  
Would you use a special side-street route (bikeway) from your home area to Sandia designated primarily for bicycles? \_\_\_\_\_

What route or routes do you recommend? \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ (Sketch a map if you wish.)

What other suggestions can you offer for making it easier and safer to ride bicycles to and from Sandia? \_\_\_\_\_  
\_\_\_\_\_

Name & Org. \_\_\_\_\_

Please return to LAB NEWS, 3212, Bldg. 802, Room 100

## Take Note

Drawings by Jim Walston of Graphic Design Section 3155-3, will go on exhibit at Brandywine Galleries, 120 Morningside Dr. SE, on Dec. 5. Jim's show will be in conjunction with an exhibit of watercolors by Robert Wood. A reception for the two artists will be held Dec. 5, 1-5 p.m.

\* \* \* \*

Gene Haertling, supervisor of Active Ceramic Materials Division 1316, is a man running out of wall space. He received another plaque recently from the Albuquerque Section of the IEEE for "Outstanding Achievement in 1971." A couple of months ago, Gene received one for writing the most outstanding paper in a decade. It was from the Electronics Division of the American Ceramic Society for the "Outstanding Paper 1960-1970" on hot pressing of ferroelectric ceramics.

\* \* \* \*

Harry Weaver (5154) will present "Nuclear Resonance of Hydrogen Contained in Metals" at the 5100 Staff Seminar Dec. 14. The seminar meets at 8:30 a.m. on Tuesdays in rm. 201, bldg. 806.



WOODY WOODALL (9112) displays the model sailplane that won the national semi-finals in competition at Denver in September. He's currently building three models to enter in the finals.

## Woody Woodall Shapes Up for World Model Sailplane Contest

## Speakers

L.S. Nelson (5324), "Drops of Aluminum Oxide Melted with a CO<sub>2</sub> Laser: The Case for Oxygen Rich Liquid Alumina," Argonne National Laboratory, Nov. 1.

R.J. Eagan (5334), "The Effect of Melt Composition on the Crystal Growth Kinetics of PbB O<sub>7</sub>"; I. Auerbach (5628) and F.P. Kirkhart (BMI), "High Temperature Ablation Performance of Binderless Graphites"; Auerbach for Kirkhart and W.C. Chard (Pfizer, Inc.), "Fabrication and Properties of Binderless Graphites," American Ceramic Society, Pacific Coast Regional Meeting, Oct. 30-Nov. 3, Anaheim, Calif.

J.V. Otts and N.F. Hunter (both 9332), "The Measurement of Mechanical Impedance and its Use in Vibration Testing"; M.B. Gens (1543), "The Dynamic Environment of Selected Military Helicopters"; F.J. Perdreauville (1541), "Analysis of the Lateral Motion of a Projectile in the Gun Tube," Shock and Vibration Symposium, Nov. 2-4, Key West, Fla.

J.M. McKenzie (1933), H.E. Kern and J.H. McQuaid (both BTL), "Manufacturing Process for Ceramic Encapsulated Junction Field Effect Transistors (JFET's) and Statistical Evaluation of JFET Header Dielectric Materials"; J.E. Powell (5223), "A Computer Based Proton-Recoil Spectrometer for Neutron Spectrum Measurements in a Fast Reactor"; L.P. Bradley (5245) and J.G. Kelly (5223), "Passive Techniques for the Measurement of Intense Electron Beam Spatial and Angular Distributions," Nuclear Science Symposium, Nov. 3-5, San Francisco.

J.F. Muir (5641) and A.A. Trujillo (5622), "Experimental Investigation of the Effects of Nose Bluntness, Free-Stream Unit Reynolds Number, and Angle of Attack on Cone Boundary Layer Transition at a Mach Number of 6," Boundary Layer Transition Specialists Workshop, Nov. 3-5, Aerospace Corporation.

L.C. Bartel (5132), "Pressure Effects in Itinerant Ferromagnets," Solid State Physics Seminar, Iowa State University, Nov. 3, Ames, Iowa.

W.J. Brya, R.R. Barikowski and P.M. Richards (all 5152), "Light Scattering from Spin Fluctuations in MnF<sub>2</sub>," Chemical Physics Seminar, Nov. 13, University of Kansas.

H.N. "Woody" Woodall (9112) is currently designing and building three model sailplanes to enter in the national finals next year. Winners of this event will enter world competition. Woody took first place in the semi-finals of the national contest in Denver last September.

The contest has stringent rules. The sailplane division is the only competition where the physical condition of the builder gives him an edge. To launch a model sailplane, the contestant runs and tows it behind him at the end of a 164' nylon cord. He can keep running until he feels the plane enter a thermal — a current of rising air. At this point he releases the model. If he becomes

exhausted before he hits a thermal, guess what. He's lost a round in the contest.

"A standard launch in dead air will give you a flight time of about two minutes and 20 seconds," Woody says. "To win, you must achieve a three minute flight so getting into a thermal is a must. I've ran around as long as 20 minutes trying to find one. That gets to be work at my age."

To give him the physical edge that he needs, Woody is currently participating in Sandia's physical conditioning program three evenings a week.

The other edge he needs in competition is in the construction and design of the models. The sailplanes can weigh no less than 14.46 oz. and the wing area can be no more than 527 sq. in. A lot of thinking goes into the design of the airfoil in the wing, the shape of the stabilizer and the moment arm — distance from the center of gravity to the tail surfaces.

Construction must be light and strong. To win the contest, the model must achieve a three minute flight for seven rounds during a seven hour period. Strong competition and varying wind conditions make the contest a severe one. A timer on board the model flips the stabilizer up after three minutes, and the plane gently glides to the ground.

In the early 1950's, Woody was active in national model contests. He set a national record for gas powered free flight in 1953 and also took second place in the international model sailplane competition.

He started modeling seriously again about six years ago when his sons were old enough to become interested. If he wins in the finals in California next year, the world meet will be either in Ireland or Italy. "The boys are already counting on going," Woody says. • dg

## Recreation Notes

### FUN & GAMES

Results of Sandia Labs Fall Tennis Tournament are:

#### Singles

Winner . . . . . Charlie Chavez (4337)

Runner-up . . . . . Robert Scipes (4123)

Winner, Consolation

Round . . . . . Eric Jones (5214)

#### Doubles

Winners . . . . . Charlie Chavez

and Robert Scipes

Runners-up . . . John McKiernan (1651)

and Donald Johnson (1435)

Winners, Consolation

Round . . . . . Ron Garin (7625)

and Bob Blount (4150)

Chairman of the tennis committee is Herman Smith (AEC/ALO). • nt

# Status Report: Metrication

Back in June, LAB NEWS reported that metrication (going to the metric system) was coming — at Sandia Labs and nationally. Where are we now? Well, the metric system is not yet. The Metric Conversion Act of 1971 (Senate Bill S-2483) is currently before the Senate Commerce Committee with no immediate action scheduled. The 90-day freeze changed a number of congressional priorities. But the Bill may come up in the Second Session.

If passed, the Bill will make International Metric System the official and standard system of measurement in the United States. It provides for converting within 10 years after the date of enactment. It also provides for an 18 month time period in which to generate a national plan to put the metric system into effect. During that period, public education programs and national publicity campaigns would be sponsored to get the public ready for the change.

From our viewpoint, Sandia's conversion should be fairly simple. Some design work is already done using the metric system. When product definitions are released, the use of dual dimensioning on drawings will enable the production facility to follow either the conventional or metric system, according to the status of their own conversion to the metric system. Total conversion is likely to take several years.

A series of presentations will be made by Corry McDonald, Physical Standards Division 7451, to get us started on some of the

longer range considerations. These are scheduled for Monday, Dec. 6, and Friday, Dec. 10 at 10 a.m. in Bldg. 815. A few of the problems we will have to live with will derive

from simultaneously having old parts, interim parts, and new ones made to metric standards.

Corry is available to help you with specific problems of metrication. • js



WE ASKED Becky McClafin (1613) what she thought about metrication. "Between two consenting laboratories it's perfectly acceptable," she replied. Becky is 34-26-36, but her friend is 860-660-910.

## Helpful Hints Offered to Beat Boasting Burglars

Burglars boast: "It's no trick to 'make it' in the suburbs . . . that's where the money is."

Unknown to unwary citizens, many routine practices of the home owner often assist the burglar. For example, an estimated 20 percent of all breaking and entering cases occur because people simply leave their doors unlocked.

Adopting a more thoughtful and protective attitude can reduce burglary. The investment in time and money is small compared to the protection afforded. Here are helpful hints for safeguarding your home:

1. If you're moving into a new home, don't give keys to strange contractors or servicemen. Keys are easily duplicated; valuable household items are not.

2. Valuables should be out of the way. Expensive jewelry ought to be in a safe deposit box. Incidentally, it is a good idea to have a record of your valuables. Wherever possible note the serial number.

3. Should you go to the market, don't leave the garage door open. An empty garage—visible to all—is an invitation to some law breakers. Day-time robberies are very common.

4. If you are going out at night, leave a

light on in the bathroom. This is no guarantee, but it wards off some prowlers.

5. How about vacations? Don't forget to inform the police that you are leaving your house vacant and for how long. But tell a neighbor too. After all, the neighbor is there much of the time.

6. Make sure that newspapers, milk bottles and mail do not accumulate on the front porch. This is a dead give away that no one is at home or likely to be home very soon.

7. Don't pull down shades or blinds when away on vacation. Preserve the normal appearance of the house.

8. When retiring for the night, lock the door and use a chain, too. Burglars say that snapping the chain is easy—but the noise is prohibitive. And while on the subject of doors, don't leave the side door open while carefully locking the front door.

\* \* \* \*

For apartment dwellers:

1. Put a chain on your apartment door. It should be short enough so that an arm cannot be inserted to unlock it.

2. Don't leave your door unlocked or ajar even when you are at home.

3. If a stranger knocks, keep the door chained. Use the "peep through" for communication until you are satisfied that the person has a legitimate purpose.

4. Are you about to employ a maid or cleaning woman? Do check references.

5. Separate your house and car keys. Keys are easily duplicated when cars are serviced, repaired, or in parking lots.

6. Dogs that bark will turn away some burglars.

7. Windows that face on fire escapes should have supplemental locks.

8. If your door is equipped with a snap lock, it can be opened with a strip of celluloid. When leaving your apartment, place the key in the lock and double lock the door.

And just a word about your car:

—Lock your car when you park it on the street. The windows should be rolled up.

—Even if you are stopping for merely a moment, don't leave your keys in the ignition. An estimated 42 percent of cars stolen are taken because the keys are not removed.

—Cars have trunks. Put your valuables there—cameras, binoculars, clothes, etc.

And keep your insurance up-to-date.

## Dave Berry Oil Paintings On Display in Bldg. 802

The colorful display of abstract oil paintings now hanging in the elevator foyer of Bldg. 802 is the work of Dave Berry (1425). Dave insists that the work is purely decorative — there are no “hidden messages.”

Dave does paint realistically — the life-sized nude in his bathroom in his home at Placitas looks so real that guests have been known to mutter “Oops, excuse me.”

But Dave feels that the abstract arrangement of color and form into pleasing patterns is more of a challenge to paint. One of the paintings now hanging in Bldg. 802 took 15 years to complete. “I was never satisfied,” Dave says.

He earned a Bachelor's degree in fine arts at Wittenberg College in 1945. He joined Sandia as a draftsman in 1952 and is now a technical staff assistant in product evaluation.



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Deadline: Friday noon prior to week of publication unless changed by holiday.  
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5. For Sandia Laboratories and AEC employees only
6. No commercial ads, please
7. Include name and organization
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

#### MISCELLANEOUS

GUITAR, small Spanish style w/case. Beeson, 255-3249.

8" BENCH SAW, metal stand, \$30. Johnson, 255-5427.

CAMERA, Yashica J5, 55mm normal lens, 28mm WA, 135mm Telephoto; Singer sewing machine, zig-zag, portable w/case. Chernoff, 265-0394.

STORKLINE six-year crib, mattress, \$10. Bishop, 299-8782.

QUEEN BED, used one month, \$175; large ceramic kiln, \$125; antique sheet music cabinet, \$35. Larsen, 265-0004.

BRUNSWICK Monterey home billiard table, regulation size w/cues and balls. Key, 247-2169.

ARGUS 35mm slide projector; cast iron tan bathtub & sliding glass shower door. Hart, 282-5220.

DRESSES, Neiman Marcus, size 10; Polaroid Swinger; Kodak 35mm camera, flash. Wright, 296-7670.

1970 Bridgestone 350 motorcycle, 4600 miles, \$795. Sanchez, 299-5658.

X-15 TRICYCLE, rear wheels steerable with joy stick, \$18. Ewing, 298-1404.

300 SAVAGE lever action rifle, \$65. Marquez, 344-4771 after 5.

PANELRAY gas space heater, free standing, \$12; new cast iron sewer pipe, 4-in. 5' lengths, \$4 each. Barth, 345-0172.

'69 HONDA 450 cb, 4000 miles, adult driven, never raced; luggage rack, shop manual, extras, \$695. Guttman, 299-7031.

8' OPEN ROAD CAMPER, butane stove, ice box, sink, sleeps 4, \$675. Gonzales, 299-7208.

CAMPING TRAILER, Starcraft pop-up, sleeps 8, refrigerator, stove,

running water, used twice, \$1650. Leonard, 299-4617.

200 SHARES of Computer Consultant Inc. stock (after the split), \$2.70 share. Gholson, 299-2663.

SCHWIN varsity bike, 10 speed, 3 mos. old, extra 2 tires, chain, rack and book rack, \$90. Hernandez, 268-5000.

12' CARTOP BOAT, aluminum, oars, \$125. Kingsley, 299-1226.

AMERICAN FLYER model train layout, 3/16" scale, 2 Santa Fe deisel engines, cars & opeating equipment, 50' track, 2 level 4' x 8' folding table, \$100. McDonald, 265-2842.

TWO CRYPTS, heart level, Sunset Memorial Park, Fox, 296-5660.

PLAYPEN, folding, wood, \$7.50; comb. baby car bed & car seat, \$5. Alvis, 298-3906.

GUITAR AMPLIFIER, 3 inputs, Harmony Model H-400, output 5 watts. Gray, 265-1883.

TELESCOPE, 375 power, coated lenses, map light, image erector, moon lens, etc. \$75. Schmidt, 299-7305.

MINIBIKE, Totogote; ping pong table; hi fi; furniture; bowling ball; ladies razor; hair dryer; electric curlers; make-up mirror. Chandler, 296-3323.

SEWING MACHINE, Kenmore zig-zag, walnut cabinet, decorative stitches, double needle, button-roller, etc. \$90. Portlock, 299-3240.

DRILL PRESS, table model w/motor, multiplex sleeve pulleys, 0-1/2 in. adjustable chuck, depth indicator, \$40. Deverman, 296-8317.

BIKE, 20" convertible boys or girls. \$20. Gendreau, 268-3436.

DINING room set; baby mattress; antiques buffet. Fisher, 299-9235.

8-TRACK STEREO player, tape carrying case, \$35. Binder, 299-2937.

TWIN BEDS w/springs, mattress, headboard, \$10 each. Campbell, 256-1015.

YOUTH BED, springs, mattress. Myers, 256-0642.

OSCILLOGRAPH, precision cathode ray, 4 probes, series ES-520, horizontal sweep, 10hz-30hz, verticle sensitivity, .02 v.inch, \$50. Flinchum, 344-1072.

ORGAN, electronic, Thomas, Malibu deluxe, complete w/Leslie speaker,

band box etc. \$1200. Silverman, 298-1308.

'71 KAWASAKI 175, 5 mos. old, 3200 miles, cost \$700, sell for \$500. Walters, 296-5803.

SKIS, Head Jr. Model 60, 150 cm (4'11") '72 model, cost \$125, sell for \$50. Stevens, 299-6086.

BRINKTUN bumper pool table w/all accessories, \$70; Bb Bundy trumpet \$50; two Stahly live-blade razors, \$15 each. Weber, 299-1389.

SEWING MACHINE, Singer, straight stitch, cabinet model, cost \$107, sell for \$50. Koletar, 255-4751.

SKIS, 200 cm w/cable bindings, \$10; Remington standard typewriter w/elite type, \$40. Brammer, 265-8194.

FREEZER, 15 cu. ft. Wards upright, \$125. Robertson, 298-2388.

TRAVEL TRAILER, '68 Aristocrat, 16', range, oven, icebox, 25 gal. water tank, electric brakes, 12 & 110 v. lights, jacks, hitch, \$1595. Garst, 299-5870.

SEWING MACHINE, commercial stand w/H.D. motor, domestic Pfaff zig-zag head, \$50, Morgan, 256-7994.

MINICYCLE, 1970 Rupp w/torque converter, 4 hp engine, full shocks, lights, \$135. Parks, 296-2261.

QUARTERHORSE, 4 yrs. old, white, trained, Metoyer, 344-4771 after 5.

GE WASHER, 3 cycle \$20; Sower, 296-7455.

MARBLE dining room table, \$60; '68 Yamaha 350 cc motorcycle, \$350. Hauser, 298-5239.

PUPPIES, 3/4 springer spaniel, setter, liver & white, ready for Christmas. MacGibbon, 256-3107.

DRAFTING TABLE w/accessories, \$20; portable humidifier, \$8; VW ski rack, \$5; naugahide dune buggy seats, \$30. Scheer, 265-1983.

FENDER Stratocrusier guitar, hard shell case, tremelo, Fender super reverb amp, 4-10 in. speakers. Matsko, 299-2145.

ROLLAWAY BED, w/innerspring mattress, \$20; basinet, \$8; youth chair \$3. Daniel, 268-8335 after 5:30.

PANASONIC portable tape cassette record, battery, AC, \$25. Claassen, 255-4347.

#### WANTED

ELECTRONIC dog collar to rent for one month. Sower, 296-7455.

WILL TRADE Ford 5-hole 16" split rim wheels and tires for 15-in. Roth, 877-4997.

RIDE to Iowa City, share expenses, Dec. 11-13. Phillips, 265-0296.

FAMILY of hamsters or similar pets w/cage, instructions. Fisher, 299-9235.

LADIES BIKE, 5 or 10 speed; .22 revolver w/holster. Chandler, 296-3323.

HOUSE TO RENT or buy from owner, 3 bdr. in Heights preferred. Westman, 255-6048.

BOY SCOUT TROOP 286, St. Johns Methodist Church, needs a scoutmaster. Nelson, 255-2364.

BOYS BIKE, 16 or 20 in. w/training wheels. Leeman, 299-9149 after 6.

CAR TOP BOAT, flat bottom small size. Shead, 298-3373.

#### LOST & FOUND

LOST — ladies silver wrist watch, black knit gloves w/leather palms, key ring with 6 keys, license tag 2P5746; gold key ring w/8 keys; mans tan fur-line gloves, ladies Bulova gold watch. Lost & Found, tel. 264-2757.

FOUND — man's silver ring w/turquoise set; 1 Ford key. Lost & Found, tel. 264-2757.

#### CARS & TRUCKS

'70 Malibu, 2 dr. ht, AC, AT, PS, vinyl roof, 350 CI, 16,000 miles. Randolph, 299-2057.

'63 VW 1200, white, low mileage. McElvaney, 268-0654 after 5:30.

'58 Volvo; '59-'62 Chevy truck engine block, \$80. Condit, 282-3788.

'65 VW, radio, good tires, \$750. Schneider, 299-3769.

'62 OPEL, new shocks, brakes, \$250. McKenzie, 299-3260 after 5:30.

'70 CORVETTE, 454, AC, PS, AM/FM, conv. w/two tops, extra set of snow tires, 17,800 miles. Kuruzovich, 877-4143 weekends.

'61 CHEVY 4-dr. wagon, R&H, PS, PB, AC, AT, V8, \$275. Fjelseth, 299-4539.

'63 CHEVY 4-dr. will trade for small Falcon, Comet, etc. Navalesi, 344-0598.

'68 VW BUS, front tire rack, radial tires. King, 282-3186.

'59 IMPALA, 6-cyl., OD, tape deck, \$350. Moerleski, 256-7609.

'63 PONTIAC station wagon, new tires, battery, alternator, \$300. Martin, 869-2049.

'66 CHEV Impala, below book, \$800. Ramirez, 255-2144.

'70 Z28 CHEVY, PS, tape radio, mags, wide tires, \$2900 or take over payments. Lucera, 247-8037.

'64 IMPALA SS, 4 dr. R&H, factory air, PS, AT, below book, \$495. Marsh, 243-2767.

'68 RAMBLER, 4-dr. Rebel V-8, factory air, PS, AT, \$950. Stephenson, 299-3914.

'69 DATSON PATROL, 21,000 miles, 4-wheel drive, new tires, Warn hubs, \$2400. Shipman, 255-2523.

'62 CHEVY station wagon, 9 passenger, \$300. Hill, 298-6669.

'62 PONTIAC station wagon, PS, PB, AC, R&H, new tires, Gallegos, 205 Mesilla NE, Apt. B, 255-5264.

#### REAL ESTATE

4-BDR. 3 baths, den, near Sandia High, Marberry construction, 6% mortgage. Harrison, 299-7325.

4-BDR. 3 1/2 baths, 3-car garage, 1.3 acres in Tres Pinos Canyon (3 miles east of city). Quigley, 299-3178.

4-BDR., den, fireplace, 1 3/4 baths, carpet, drapes, S/W landscaping, corner lot, garage, circle drive, \$35,990. Bozone, 8500 Harwood NE, 298-1314.

#### FOR RENT

MOBILE HOME, 12 x 58, furnished, 3 BDR. washer, utilities paid, \$140/mo. Martin, 298-6384 after 5:30.

1 BDR. Mobile Home, furnished. Available now until Mar. 15. Ward, 242-2045.

DENTAL OFFICE, fully equipped, office and reception rooms, Heights. Browne, 344-2986.



# HOLIDAY HAPPY HOUR TONIGHT

TONIGHT'S buffet menu may go down in history — baron of beef, lobster newburg, chicken cacciatore, plus lots of salads and goodies. All this for only \$1.75 for adults, \$1.50 for kids. In addition, happy hour prices will be in effect from 5 to 10 p.m. The Dixieland Top Hats will play for dancing and Yolanda Adent will entertain in the main lounge with a sing-along.

Door prizes will be given away throughout the evening.

Since tonight is a special holiday happy hour, guest fee is \$1.

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HAPPY HOURS for the next two weeks — Dec. 10 and 17 — will be held in the main lounge only from 5 to midnight. Club facilities will be in use for organizational Christmas parties. On Dec. 24, Happy Hour will start at noon and run until 4 p.m. Lunch will not be served. The Club will be closed Dec. 25-27.

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THE KIDS CHRISTMAS PARTY is scheduled Saturday morning, Dec. 18. Ron Day and Mary Kay will present a special holiday puppet show. Enchanters will sing Christmas carols, cartoons will be shown, and, of course, Santa Claus will pass out goodies to kids 10 and under. It's free to members and families, but members only, please.

TEENAGERS can do their thing on Monday, Dec. 20, with a group called "Back Yard Grass" wired into the bandstand. Chuck Logan, local disc jockey, will emcee the event and give away record albums throughout the evening. Member parents should pick up tickets at the Club office.

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SPEAKING of picking up tickets, now would be a good time to get yours for the Club's annual New Year's Eve celebration. As in the past, there will be dancing upstairs and downstairs and a great champagne breakfast will be served as the first act of 1972. Tickets are \$7.50 for member couples, \$11 for guest couples. Frank Chewiwie will play upstairs, Wildman Bob Banks downstairs. Hats, favors, etc. will be distributed.

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ROSARIO AYRES, who has moderated a number of noon fashion shows at the Club, will bring her bevy of beautiful models back to the Club at noon on Tuesday, Dec. 8. The girls will present a selection of holiday fashions from Lilyans. If past experience is any guide, you should plan on making it there early. The place fills up in a hurry and sometimes there's standing room only.

SANADO CLUB WOMEN are responsible for the Christmas Decorations which have turned the Club into a holiday hall. Sanado will hold its annual formal Debutante Ball with the presentation of eight young ladies on Saturday, Dec. 11. The dinner dance begins at 6 with cocktails, a wassail bowl ceremony is scheduled at 6:30, dinner will be served at 7:30 followed by dancing to Freeman Lacey and the Mark IV until midnight. Mrs. George Dennis is chairman of the ball and Mrs. Jay Chamberlin is chairman of the decorations committee.

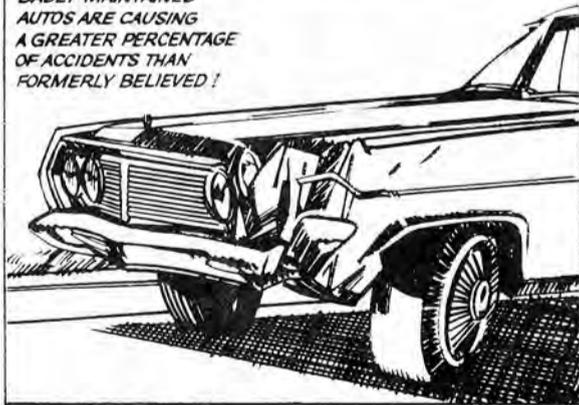
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TRAVEL PACKAGES sponsored by the Coronado Club include the trip to Hawaii, Feb. 21-28 and the 16-day trip to Spain and Portugal in October 1972. Chet Fornero (4337), Club president, urges all those interested in the Hawaii trip — about 10 seats are left in the chartered jet — to sign up right away. Payment of the \$349 fee is due Jan. 7, 1972. He also urges those interested in the Spain-Portugal trip to pay the \$100 deposit by the end of January. Copies of the trip itinerary are available at the Club office.

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## THE SAFE DRIVER

BADLY MAINTAINED AUTOS ARE CAUSING A GREATER PERCENTAGE OF ACCIDENTS THAN FORMERLY BELIEVED!



THE SAFE DRIVER HAS HIS CAR SAFETY-CHECKED REGULARLY, EVEN IF HIS STATE REQUIRES MOTOR VEHICLE INSPECTION ONCE OR TWICE A YEAR!



KEY SAFETY CHECKPOINTS INCLUDE BRAKES, LIGHTS, TURN SIGNALS, STEERING, SUSPENSION, TIRES, EXHAUST SYSTEM, GLASS, WIPERS, WASHERS, DEFROSTERS, MIRRORS, HORN, DOOR LOCKS AND SEAT BELTS.



SURROUNDED by some of the papier-mache angels used in decorating the Club for the Christmas holidays are the women responsible for the coming formal Sanado Debutante Ball. L to R are Mrs. George Dennis, ball chairman; Mrs. Jay Chamberlin, decorations chairman; and Mrs. William Meyer, Sanado president.